Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (**Currently Amended**) A device comprising a a substrate and a film coating on said substrate, wherein said film coating comprises a quasi-amorphous pyroelectric compound, said compound comprising:

a metal, a mixture of metals, or a semi conducting compound lacking spatial periodicity;

said quasi-amorphous pyroelectric compound being an inorganic oxide compound having piezoelectric properties;

said quasi-amorphous pyroelectric compound being a product of application of a mechanical strain to a substantially amorphous compound, said mechanical strain being controlled so as to prevent crystallization of said compound and so that said compound is pyroelectric and has a pyroelectric vector whose direction cannot be changed or reversed .

2. (**Withdrawn**-Currently amended) The device of claim 1, wherein said quasi-amorphous compound ~~of claim 1 having~~has the formula

$(A_xB_{1-x})_pO_n$, wherein A and B are independently selected from transitions metals, elements of Group IVA of the periodic table, alkali metals, alkali earth metals and rare earth metals; x has values of between 0 to 1; p is an integer having the values 1, 2 or 3; and n is an integer having the value of 1, 2, 3 or 4.

3. (**Withdrawn-Currently amended**) The device ~~quasi-amorphous compound~~ of claim 2, wherein A is a transition metal or an element of Group IVA of the periodic table, x is 1 and p is 2.

4. (**Currently amended**) The device of claim 1, wherein said quasi-amorphous compound ~~of claim 1, having~~has the formula $(A_xB_{1-x})(C_yD_{1-y})O_n$ wherein A and B are independently selected from alkali metals, alkali earth metals, rare earth metals and elements of Group IVA of the periodic table; C and D are independently selected from transition metals and alkali earth metals; x and y have values of between 0 to 1; and n is an integer having the value of 1, 2 or 3.

5. (**Currently amended**) The device~~quasi-amorphous compound~~ of claim 4, wherein A and B are independently selected from Ba, Sr, Ca, Pb, La,

Eu, Li, Na, K and Cs ; C and D are independently selected from Ti, Zr, Nb, Ta, Sc, Mg and V; and n is 3.

6. (**Withdrawn-Currently amended**) The device~~quasi-amorphous compound~~ of claim 5, wherein A and B are independently selected from Ba, Sr, Ca, Pb, La and Eu.

7. (**Currently amended**) The device ~~quasi-amorphous compound~~ of claim 5, wherein A and B are independently selected from Li, Na, K and Cs.

8. (**Currently amended**) The device~~quasi-amorphous compound~~ of claim 5, wherein C and D are independently selected from Ti and Zr.

9. (**Currently amended**) The device~~quasi-amorphous compound~~ of claim 6, wherein C and D are independently selected from Ti and Zr.

10. (**Currently amended**) The device~~quasi-amorphous compound~~ of claim 7, wherein C and D are independently selected from Ti and Zr.

11. (**Currently amended**) The device ~~quasi amorphous compound~~ of claim 5, wherein C and D are independently selected from Nb, Ta, Sc, Mg and V.

12. (**Currently amended**) The device~~quasi amorphous compound~~ of claim 6, wherein C and D are independently selected from Nb, Ta and V.

13. (**Currently amended**) The device~~quasi amorphous compound~~ of claim 7, wherein C and D are independently selected from Nb, Ta and V.

14. (**Currently amended**) The device~~Inorganic, quasi amorphous compound~~ of claim 4, wherein y=0 and the quasi amorphous compound has~~having~~ the formula $(A_xB_{1-x})DO_3$, ~~wherein A, B, D and x are as defined in claim 4~~and is an inorganic compound.

15. (**Currently amended**) The device of claim 4, wherein the quasi-amorphous compound ~~of claim 4 having~~has a pyroelectric coefficient of between about 10^{-12} C/(cm^2 x K) and about 10^{-7} C/(cm^2 x K).

16. **(Currently amended)** The device of claim 14, wherein the quasi-amorphous compound ~~of claim 14 having~~has a pyroelectric coefficient of between about 10^{-12} C/(cm^2 x K) and about 10^{-7} C/(cm^2 x K).

17. **(Currently amended)** The device of claim 4, wherein the quasi-amorphous compound ~~of claim 4~~is selected from $BaTiO_3$, $CaTiO_3$, $PbTiO_3$, $Pb(ZrTi)O_3$, $Pb(Zr_{0.35}Ti_{0.65})O_3$, $(PbCa)TiO_3$, $(PbLa)(ZrTi)O_3$, $PbLaTiO_3$, $Pb(ScTa)O_3$, $Pb(ScNb)O_3$, $Pb(MgNb)O_3$, $SrTiO_3$, $(Sr_{0.65},Ba_{0.35})TiO_3$, $(Ba_{0.70},Sr_{0.30})TiO_3$ and $EuTiO_3$.

18. **(Currently amended)** The device of claim 17, wherein the quasi-amorphous compound ~~of claim 17 having~~has a pyroelectric coefficient of between about 10^{-12} C/(cm^2 x K) and about 10^{-7} C/(cm^2 x K).

19. **(Currently amended)** The device of claim 17, wherein the quasi-amorphous compound ~~of claim 17 being~~is selected from $BaTiO_3$, $PbTiO_3$ and $SrTiO_3$.

20. (**Currently amended**) The device of claim 18, wherein the quasi-amorphous compound ~~of claim 18 being~~consists of is $BaTiO_3$.

Claims 21-23. (**Cancelled**)

24. (**Currently amended**) The device comprising a ~~a~~ substrate and a film coating on said substrate, wherein said film coating comprises an inorganic~~inorganic~~ quasi-amorphous compound of the formula $(AxB1-x)(CyD1-y)O3$,

wherein A and B are independently selected from alkali metals, alkali earth metals, rare earth metals and elements of Group IVA of the periodic table;

C and D are independently selected from transition metals and alkali earth metals;

x and y have values of between 0 to 1;

lacking spatial periodicity; and

wherein said compound is a product of applying a mechanical strain to a substantially amorphous compound of the formula $(AxB1-x)(CyD1-y)On$ wherein n is an integer having the value of 1, 2 or 3, said mechanical strain being controlled so as to prevent crystallization of said compound, thereby

obtaining inorganic quasi-amorphous compound having pyroelectric properties and so that said compound has a pyroelectric vector whose direction cannot be changed or reversed.

25-26. (Canceled)

27. (Currently amended) The device of ~~claim 26~~claim 4, wherein the substrate is selected from Si, SiO_2 and glass.

28. (**Original**) The device of claim 27, wherein the thickness of the coating layer is below 0.5 micron.

29. (Currently amended) The device~~A device comprising the quasi-amorphous compound~~ of claim 1, ~~the device being~~ operable as a sensor for sensing an external field including at least one of the following: temperature field, magnetic field and electric field.

30. (Currently amended) The device~~A device comprising the quasi-amorphous compound~~ of claim 4, ~~the device being~~ operable as a sensor for

sensing an external field including at least one of the following: temperature field, magnetic field and electric field.

31. (**Currently amended** ~~A device~~The device of claim 1, wherein said compound forms ~~having~~ an acoustic wave propagation element ~~including the quasi-amorphous compound of claim 1~~.

32. (**Currently amended**) ~~A device~~The device of claim 4, wherein said compound forms ~~having~~ an acoustic wave propagation element ~~including the quasi-amorphous compound of claim 4~~.

33. (**Currently amended**) ~~A device having~~The device of claim 5, wherein said compound forms an acoustic wave propagation element ~~including the quasi-amorphous compound of claim 5~~.

34. (**Currently amended**) ~~A~~The device of claim 1, wherein said compound comprises a birefringent medium ~~comprising the quasi-amorphous compound of claim 1~~.

35. (**Currently amended**) ~~A~~The device of claim ~~41~~, wherein said compound comprises a birefringent medium ~~comprising the quasi-amorphous compound of claim 4~~.

36. (**Cancelled**).

37 (**Cancelled**).

38. (**Canceled**)

39. (**Withdrawn-Currently amended**) The device of ~~claim 38~~claim 3, wherein the substrate is selected from Si, SiO2 and glass.

40. (**Withdrawn- Previously presented**) The device of claim 39, wherein the quasi-amorphous compound is SiO2.

41. (**Currently amended**) The device of claim 1, wherein the quasi-amorphous pyroelectric compound ~~of claim 1, which~~ is a non-crystalline ionic solid having macroscopic polarization.

42. (**Currently amended**) A device comprising a ~~a~~ substrate and a film coating on said substrate, wherein said film coating comprises a quasi-amorphous pyroelectric compound comprising a metal, a mixture of metals, or a semiconducting compound lacking spatial periodicity;

a. said quasi-amorphous pyroelectric compound being an inorganic oxide compound having piezoelectric properties, said pyroelectric compound being in the form of a film;

b. said quasi-amorphous pyroelectric compound being produced by applying a mechanical strain to a substantially amorphous compound being sputtered on said substrate;, said mechanical strain comprising passing said film through a steep unidirectional temperature gradient generating a gradient of mechanical strain, said strain gradient having one in-plane component along the temperature gradient and one out-of-plane component, said out-of-plane component inducing an irreversible ~~stable~~ orientation of the molecular grouping due to compressive stress from the in-plane component; and

c. said temperature gradient being controlled so as to prevent crystallization of the amorphous compound, thereby obtaining highly

stressed amorphous films, and so that said compound is pyroelectric and has a pyroelectric vector whose direction cannot be changed or reversed.

43. (**Currently amended**) A device comprising a ~~a~~ substrate and a film coating on said substrate, wherein said film coating comprises a quasi-amorphous pyroelectric compound comprising a metal, a mixture of metals, or a semiconducting compound lacking spatial periodicity;

a. said quasi-amorphous pyroelectric compound being an inorganic oxide compound having piezoelectric properties;

b. said pyroelectric compound being a produced by applying a mechanical strain to a substantially amorphous compound;

c. said pyroelectric compound being made of a material having an asymmetric preferred direction;

d. said piezoelectric properties being stress induced dipole ordering; and

e. said mechanical strain being controlled so as to prevent crystallization of said compound, and so that said compound is pyroelectric and has a pyroelectric vector whose direction cannot be changed or reversed.

44. **(New)** The device of claim 1, wherein said film is clamped by the substrate, such that volume expansion of said film is restricted.

45. **(New)** The device of claim 24, wherein said film is clamped by the substrate, such that volume expansion of said film is restricted.

46. **(New)** The device of claim 42, wherein said film is clamped by the substrate, such that volume expansion of said film is restricted.